

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Youhao Xu, et al.

Examiner: Jennifer A. Leung

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For: RISER REACTOR FOR FLUIDIZED
CATALYTIC CONVERSION

Confirmation No.: 5903

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION UNDER 37 C.F.R. §1.132

Sir:

I, Guozhi Wei, hereby declare as follows:

1. I am a Chinese Citizen residing in Songyuan City, Jilin Province, People's Republic of China.
2. From September 1983 to July 1987, I studied Chemical Engineering at Jilin Institute of Chemical Technology and obtained my Bachelor's Degree.
3. I have worked at QianGuo Petrochemical Company of China National Petroleum Corporation (CNPC), since 1987. CNPC is currently China's largest integrated oil and gas company. Presently, I am a Vice Engineer-in-Chief responsible for oil processing within the company.
4. Specifically, I am in charge of the industrial Fluidized Catalytic Cracking (FCC) unit in my company's refinery, particularly including its operational performance such as, for

example, gasoline quality, product distribution, and energy consumption. Due to the chemical nature of catalytic cracking reactions, the olefin content in gasoline within my company's FCC unit was rather high. In order to reduce the olefin content in gasoline produced in my company's refinery, the following were investigated.

5. In 1999, special catalysts were initially employed in my company's FCC unit in an attempt to reduce the olefin content in gasoline. This initial attempt in olefin reduction was limited, and the yield of valuable products was decreased. In 2004, a Two-Stage Riser Fluidized Catalytic Cracking (TSRFCC) technology developed by China University of Petroleum was employed by my company in a continued attempt to reduce the olefin content in gasoline. The TSRFCC technology encountered numerous problems which hindered smooth operation of my company's refinery. Moreover, my company experienced a decrease in the yield of valuable products, and the TSRFCC technology increased energy consumption within my company's FCC unit.

6. In 2006, and after a thorough marketing evaluation, my company purchased and employed a maximizing iso-paraffin (MIP) apparatus (i.e., a fluidized catalytic cracking riser reactor for maximizing iso-paraffins) from Research Institute of Petroleum Processing (RIPP), SINOPEC. Since the date when the MIP apparatus was fully operational, the MIP apparatus has provided a dramatic reduction in olefin content in gasoline, as well as an increase in the production of valuable products and lower energy consumption compared with the other technologies used at my company. Furthermore, the operation of the MIP unit is rather easy, and the MIP unit has a short revamp time associated therein which decreases the time that the unit is offline. Compared with other riser revamps, the cost for the MIP unit described above is the lowest presently available in China.

7. I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and that further that these statements were made with knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that willful false statements may jeopardize the validity of the Application or any patent issuing therefrom.

Dated this 24 day of Oct. 2008.

Guozhi Wei

Signature